U.S. PATENT APPLICATION

FOR

SYSTEM, METHOD AND COMPUTER
PROGRAM PRODUCT FOR ALLOWING A
CARRIER TO ACT AS A CREDIT-APPROVAL
ENTITY FOR E-COMMERCE
TRANSACTIONS

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SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR ALLOWING A CARRIER TO ACT AS A CREDIT-APPROVAL ENTITY FOR E-COMMERCE TRANSACTIONS

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RELATED APPLICATION(S)

The present application claims the priority of a provisional application filed June 12, 2000 under serial number 60/210,966, and which is incorporated herein by reference in its entirety. The present application is further related to a co-pending

10 application filed concurrently herewith under the title "SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR CHARGING FOR COMPETITIVE IP-OVER-WIRELESS SERVICES" and docket number XACCTP004 and naming Limor Schweitzer as inventor, and a co-pending application filed concurrently herewith under the title "SYSTEM, METHOD AND COMPUTER PROGRAM

15 PRODUCT FOR PREPAID WIRELESS VOICE COMMUNICATION AND IP SERVICES" and docket number XACCTP005 and naming Limor Schweitzer as inventor, which are each incorporated herein by reference in their entirety.

FIELD OF THE INVENTION

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The present invention relates to e-commerce, and more particularly to administering payment for e-commerce transactions.

BACKGROUND OF THE INVENTION

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Over the last several years, businesses have been attracted to the rapidly growing number of personal computer users. More specifically, these businesses have realized the potential customer base of the so-called "on-line users." On-line service providers such as America Online, CompuServe, and Prodigy have provided

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easy access to computer networks such that a large captive audience of on-line consumers has emerged.

In the business arena, a merchant can, with an Internet address and a
5   hypertext editor, develop a first hypertext document called a "home page" (or "virtual storefront") which a user sees when he enters the Web at the merchant's Web server. That home page may provide descriptions of products and services through the use of media such as graphic images, sound, and hypertext link choices. The information allows the consumer to find the product or service he desires to
10   purchase. The result is an easily accessible system for purchasing anything from a journal page and investor advice to travel tickets and golf clubs.

Several techniques for creating cashless commercial transactions exist for sales over networks such as the Internet. The most common technique involves the
15   use of credit cards where credit is extended to a cardholder by a financial institution to cover purchases from participating merchants. The financial institution pays the merchant the purchase price less a service charge fee and later bills the cardholder for the purchase price. During use, the merchant gets credit approval from credit card companies using weak customer identification. Further, the merchant
20   communicates over secured link with the credit card company and provides customer identifiers including credit-card number, customer name, expiration date, billing address, etc. Of course, this information must be collected from the customer during each transaction.

25   Another system that allows for purchases without the use of cash is a debit system. One example of such a system is NetBill. In such systems, a large server maintains accounts for both merchants and consumers. These NetBill accounts are linked with conventional financial institutions. When a consumer chooses to purchase goods or services from a merchant, a NetBill transaction is commenced in
30   which the product or service is transferred, if possible, e.g., a journal page, the consumer's account is debited, and the merchant's account is credited. When

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necessary, funds in the consumer's NetBill account can be replenished by electronic transfer from a bank or by credit card. Also, funds in the merchant's NetBill account are made available by depositing the funds in the merchant's bank account. Similar to the credit system, the merchant must communicate with the debit system and

5   provide customer identifiers including a debit account identifier, customer name, billing address, etc. Again, this information must be collected from the customer during each transaction.

By requiring the merchant to collect the above credit and/or debit account

10   information for each transaction, both the merchant and the customer are inconvenienced in terms of time and costs. There is therefore a need for an improved technique of administering payments for transactions carried out over the Internet.

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DISCLOSURE OF THE INVENTION

A system, method and computer program product are provided for paying for a transaction over the Internet. Initially, information is received utilizing a network. Such information includes an Internet Protocol (IP) address of a user and an amount of payment due. An account is then identified using at least a portion of the information, i.e. the IP address. Thereafter, payment is administered for the payment due by billing against the account. In a preferred embodiment, the present invention may be carried out by a network service provider, or carrier, who is capable of providing the user with access to the network.

In one embodiment of the present invention, the account may take the form of a debit account. Further, a site may send the information to the network service provider, or carrier in response to the user carrying out a transaction using the site. As an option, the information may further include port numbers which are associated with applications facilitating the required transactions.

In another embodiment of the present invention, user data may be identified by the network service provider, or carrierbased on the received information. Such user data may then be sent to the site. Optionally, the user data may include shipping information. Further, permission may be requested from the user prior to sending the user data to the site.

As an option, the administration of payment may be limited based on a rule agreed upon by the site, the network operator or carrier, and the consumer. Further, the network service provider, or carrier may collect a fee from the site. Such fee may take the form of a percentage of the payment due.

In various embodiments, the foregoing techniques may be carried out by a
financial institution offering credit in conjunction with a network service provider.

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BRIEF DESCRIPTION OF THE DRAWINGS

Figure **1** illustrates a method for paying for a transaction over the Internet;

5   Figure **2** illustrates an exemplary flow process associated with the method of Figure **1**;

Figure **3** illustrates yet another exemplary flow process associated with the method of Figure **1**;

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Figure **4** shows an exemplary accounting system and the manner in which it interfaces with a conventional General Packet Radio Service (GPRS) system for collecting IP content usage information and call description record information; and

15   Figure **5** illustrates a diagram showing a flow of information using the system of Figure **4**.

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DESCRIPTION OF THE PREFERRED EMBODIMENTS

Figure 1 illustrates a method 100 for paying for a transaction over the

5   Internet. Initially, in operation 102, information is received from an e-commerce site

utilizing a network. In one embodiment, the information includes an Internet

Protocol (IP) address of a user and an amount of payment due. As an option, the

information may further include port numbers, and/or any other information that

may help identify the user and/or an associated transaction. For security purposes,

10   the information may be received over a secure link.

It should be noted that the information may be received from a site in

response to a user carrying out a transaction using the site. For example, the user

may indicate that he or she wishes to purchase goods or services using the site.

15   Thereafter, the site may send the information for payment purposes. In the

alternative, the information may be received from the user or a combination of the

user and the site.

Upon receipt of the information, an account is identified in operation 104

20   using at least a portion of the information, namely the IP address and port numbers.

This may be accomplished by keeping a database that links IP address and port

numbers to corresponding accounts. Tables may be constructed when an account is

established by a user for this purpose. In one embodiment, the account may be a

debit, credit or any other type of desired account adapted to transfer value for

25   payment purposes. In the case of a debit account, regulatory credit checks may be

avoided.

Thereafter, in operation 106, payment is administered for the payment due by

billing against the account. This may be accomplished by sending a check to the site

30   on which the transaction occurred, transferring money to an account owned by the

site, or by other value transfer mechanisms. In a preferred embodiment, the present

invention may be carried out by a network service provider or, in other words, carrier, who provides the user with access to the network.

In another embodiment, the present invention may be carried out by a
5 financial institution offering conventional credit through credit cards in conjunction with a network service provider who provides the user with access to the network. During each transaction, the user may provide his/her credit card information to the financial institution, which is then correlated with the user account information stored with the network service provider. This leads to strengthened user
10 authentication that greatly reduces fraud.

As an option, user data may be identified based on the received information. Such user data may then be sent to the site for various purposes. In one embodiment, the user data may include shipping information that is included in the
15 aforementioned tables. By providing the site with such shipping information, goods may be delivered without asking the user to enter any additional information. Optionally, permission may be requested from the user prior to sending the user data to the site. In other embodiments, the user data may include any information relating to the user and facilitates e-commerce.
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In order to more effectively interface with the e-commerce sites, a hierarchy of purchasable item categories may be maintained. Further, each e-commerce site may be required to sign an agreement to tag goods and services with a category identifier so that pre-selection can apply. In other words, the owners of the debit accounts can pre-select
25 purchasable categories when the account is set up. To this end, the administration of payment may be limited based on a user-determined rule. In particular, parents may be permitted to control how kids spend their money, and corporations may limit the scope of travel expenses. It should be noted, however, that the administering of payment may be limited by any rule. For example, the payment may be simply limited by a maximum
30 purchase price, etc.

In order to generate revenue, a fee may be collected from the site for each transaction. In one embodiment, such fee may take the form of a percentage of the payment due.

5   Figure **2** illustrates an exemplary flow process associated with the method **100** of Figure **1**. As shown, three parties may be involved including a user **200** communicating from a computer, an e-commerce site **202** communicating from a site on the Internet which is accessible to the user via a conventional network connection. It should be noted that any type of protocol may be used to interface with the e-commerce site **202** including, but not limited to hypertext transfer protocol (HTTP), wireless application program (WAP), or any other protocol allowing the user **200** to communicate with the e-commerce site **202**. Further included in the process is a carrier **204** which has a relationship with the user **200**. In particular, the carrier, or network service provider, **204** maintains an account for the user **200**. In the present description, the network service provider is defined as being capable of providing the user with access to the network.

As shown in Figure **2**, the user **200** interfaces with the e-commerce site **202** in order to browse goods and services and identify the prices thereof. See operation **208**. During this operation, an IP address and port numbers are conveyed. It should be noted that this may be accomplished manually or, more preferably, automatically upon receipt of a message using Internet Protocol. As is well known, the IP address and port numbers may be automatically retrieved from such a message.

Next, the e-commerce site **202** may indicate a discount to be received if various goods and services are purchased. Further, the carrier **204** may be identified in operation **210**. Once the price is identified, the user **200** may indicate whether he or she wishes to purchase the goods or services in operation **212**.

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In response to the user **200** asking to purchase the goods or services, the e-commerce site **202** sends the IP address, port numbers and price of the goods or services to the carrier **204**. Note operation **214**. It should be noted that the price may already reflect the discount set forth in operation **210**. In response thereto, the

5   carrier **204** may provide a uniform resource locator (URL) to which the user **200** must link, as indicated in operation **216**. This link is then relayed to the user **200** from the e-commerce site **202** in operation **218**. Ideally, such is relayed inside a secured carrier network.

10   The foregoing URL allows the user **200** to view a form that gives permission to the carrier **204** to pay the e-commerce site **202** the price using the debit account established between the user **200** and the carrier **204**. As an option, such permission may further include providing the e-commerce site **202** a shipping address which the carrier **204** obtained when the debit account was established, or updated thereafter.

15   See operation **220**. It should be noted that the permission may be granted by the user **200** to the carrier **204** by simply clicking an icon or any other more or less sophisticated procedure.

In response to the permission being granted in operation **220**, the carrier **204**

20   provides the e-commerce site **202** with a confirmation number and the shipping address in operation **222**. As such, the e-commerce site **202** is capable of shipping any goods to the user, or providing a receipt therefor. A confirmation is then sent from the e-commerce site **202** to the user **200** in operation **224**.

25   With continuing reference to Figure **2**, a fee may be charged to the e-commerce site **202** by the carrier **204** in operation **226**. As an option, this may be a percentage of the payment due for the services, and may be simply deducted from the amount due to the e-commerce site **202**. Finally, the e-commerce site **204** may ship any purchased goods to the user **200** using the shipping information, as

30   indicated in operation **228**.

It should be noted that security cannot be infringed because the customer confirmation is given by the user while accessing a site that is internal to carrier **204**, possibly with an IP address that cannot be accessed from outside the carrier's

5   network. The URL of the internal site may be "pushed" at the browser by the e-commerce site **204** (who can not access that URL because it is on the wrong side of a firewall).

Figure **3** illustrates yet another exemplary flow process associated with the

10   method **100** of Figure **1**. As shown, three parties may again be involved including a user **300** communicating from a computer, an e-commerce site **302** communicating from a site on the Internet which is accessible to the user via a conventional network connection. Further included in the process is a carrier gateway **304** which has a relationship with the user **300** similar to as before.

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In the present description, a gateway is a network point that acts as an entrance to another network. The Internet typically consists of gateway nodes and core nodes, where gateway nodes interface with host nodes that generally reside at user premises. The computers of network users and the computers that serve content

20   (such as Web pages) are host nodes. The computers that control traffic within a company's network or with a local Internet service provider (ISP) are gateway nodes. In the network for an enterprise, a computer server acting as a gateway node is often also acting as a proxy server and a firewall server. Gateways also involve the use of router and switch.

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As shown in Figure **3**, the user **300** initially transmits a request for prices on goods or services in operation **306**. This request is then received by the carrier gateway **304** which in turn relays the request in operation **308**. Such request may further identify the carrier associated with the gateway **304**.

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In response thereto, the e-commerce site **302** sends an indication of the price to the user **300** by way of the carrier gateway **304**. Note operation **310**. This request is then relayed from the carrier gateway **304** to the user **300**. As shown, the price may be modified in order to generate revenue for the carrier associated with the

5 carrier gateway **304**. The user is then given the opportunity to purchase the goods and services in operation **313** which is, in turn, relayed from the carrier gateway **304** to the e-commerce site **302**. See operation **314**.

In addition to relaying the purchase request in operation **314**, a user identifier

10 and/or shipping information may also be transmitted to the user e-commerce site **302** from the carrier gateway **304**, as indicated in operation **316**. If such information is sufficient, the e-commerce site **302** may indicate to the carrier gateway **304** that the purchase is complete in operation **318**. Such message may then be relayed from the carrier gateway **304** to the user **300** in operation **320**.

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With continuing reference to Figure **3**, the purchase price may be charged to the user **300** by the carrier gateway **304** in operation **322**. Next, such money is relayed to the e-commerce site **302** in operation **324**. As an option, the money given to the e-commerce site **302** may reflect a fee for the services provided by the carrier

20 gateway **304**.

It should be noted that the carrier may include an IP network, WAP network, or a combination thereof. While implementing transactions carried out over an IP network is commonly known to those of ordinary skill, using a WAP network carrier

25 may require integration with a wireless network.

Figure **4** shows an exemplary accounting system **400** and the manner in which it interfaces with a General Packet Radio Service (GPRS) system **402** for collecting IP content usage information and call description record information. By

30 providing such an interface, transactions involving a wireless network are facilitated.

As shown, the exemplary system **400** includes a plurality of data gatherers **404** which are in turn a component of a plurality of information source modules (ISMs). Such ISMs interface with the Serving GPRS Support Node (SGSN) and Gateway GPRS Support Node (GGSN) of the GPRS system **402** for receiving the call

5   description records (CDRs) therefrom.

This may be accomplished by receiving CDRs directly from the SGSN and/or GGSN. Also, the present invention may support the Ga protocol as described by European Telecommunications Standards Institute (ETSI) specs, accepting all

10   types of CDRs produced by SGSN and GGSN. This provides mobility, short message service (SMS), and quality of service (QoS). It should be noted, however, that the accounting system **400** may interface the GPRS system by any desired means.

15   In one embodiment, the call description record information may include conventional CDRs or any other data structure that is collected from the GPRS system, and is descriptive of calls that take place thereover. Further, the call description record information may be collected by the data gatherers **404** of the ISMs, which interface the GPRS system **402**. Note Figure **4.**

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As an option, the system **400** may use the received CDRs to map IP content events to ISMs, resulting in a new type of call description records, XDRs. Such XDR's get fed into rating engines and then to a standard content based billing module **406**. For more information on how one exemplary content based billing

25   module **406** operates, reference may be made to PCT application WO9927556A2 entitled "NETWORK ACCOUNTING AND BILLING SYSTEM AND METHOD" published June 3, 1999, and which is incorporated herein by reference in its entirety.

Figure **5** shows a flow of information using the system **400** of Figure **4.** As

30   shown, a plurality of IP-enabled mobile communication units **502** are provided

which are adapted to connect to a base station BSS **504** over a Global System for Mobile Communication (GSM) **506** or any other wireless network.

5   A packet tunnel **508** is then created from the handset through a SGSN of the BSS **504** to a router **510** logically located in the GGSN. From that router **510**, the packets are outputted to the operator's IP network **512**. A LDAP Radius server **514** may be provisioned so that whenever mobile communication units belonging to these corporate customers "log-in" to the network, they will be given an IP address.

10   The present embodiment may collect the accounting information from the different parts of the network, correlating GPRS info with IP content. As an option, this may be accomplished in a manner set forth in a co-pending patent application filed concurrently herewith under the title "SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR CHARGING FOR COMPETITIVE IP-

15   OVER-WIRELESS SERVICES" and docket number XACCTP004 and naming Limor Schweitzer as inventor. Converged data records may then be sent to be rated and then sent to a conventional debit account mechanism **516**. For more information on one possible implementation of a debit account mechanism **516**, reference may be made to a co-pending application filed concurrently herewith under the title

20   "SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR PREPAID WIRELESS VOICE COMMUNICATION AND IP SERVICES" and docket number XACCTP005 and naming Limor Schweitzer as inventor.

         While various embodiments have been described above, it should be

25   understood that they have been presented by way of example only, and not limitation. Thus, the breadth and scope of a preferred embodiment should not be limited by any of the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents.

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